



TECHNICAL NOTE

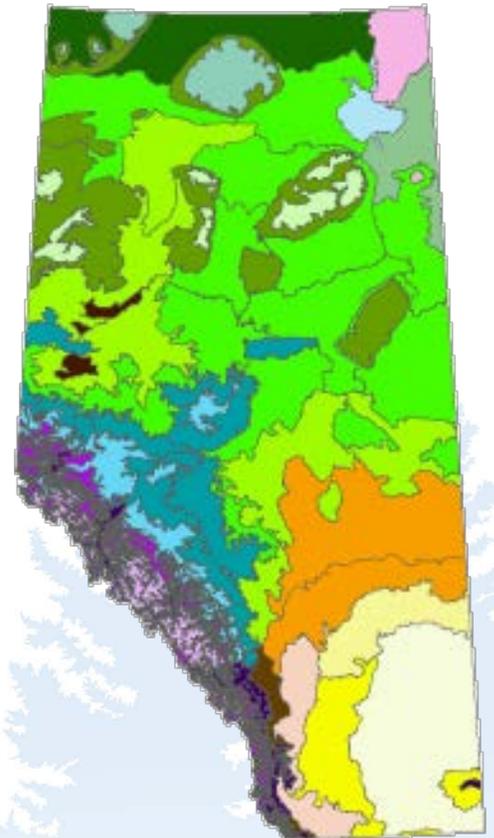
Seeds Collection, Processing and Storage

Introduction

This publication provides a valuable guide for reclamation practitioners and technicians through the documents that regulate plant deployment for reclamation in northwestern Alberta and to provide best management practices for the harvest and handling of native seeds for use in reclamation in the Boreal Forest Natural Region of northwest Alberta.

Forested areas of the province have been divided into seed zones based on geographic uniformity, natural sub-region and elevation (see figure 1). In general, individuals (within each species) within each seed zone are deemed similar enough to be exchangeable.

Detailed information about seed collection, processing, registration, storage and deployment can be found in our reclamation Body of Knowledge (BoK).



Source: ASRD, 2005

Recommended best practices

- The collection site of native plant material should be as close as possible to the disturbed site (within the same Natural Region).
- Seeds harvested outside of a given seed zone can only be deployed if a variance is applied for and granted.
- Apply for seed collection authorization with Alberta Sustainable Resource Development (ASRD) if vegetative material collected is intended for reforestation or for research supporting reforestation (and reclamation) that is carried out on public land.



Source: North Saskatchewan Watershed Alliance

Ethics and Practices

- Avoid rare or fragile habitats.
- Know the plants of the area before collecting; only collect common species or those with a large population.
- Collect undamaged ripe seed or cuttings, not entire plants.
- Leave at least 50% of the seed in place to allow natural propagation, and to provide food for insects, birds and small mammals.
- Collect minimal amounts (from no more than 10% of the plants) in areas that may be subjected to further collecting by the general public or where grazing reduces natural regeneration.
- Leave an area to rest for at least two years between collections if possible.
- Avoid the use of heavy machinery to prevent soil and vegetation damage.



Seeds Harvest

- It is important to survey collection sites during the flowering season to gauge harvest dates.
- Dry fruits such as cones and dry capsules should be harvested as seeds ripen but prior to opening.
- Fleshy fruited species ought to be harvested when fruit is ripe but again before dispersal (See figure).
- Vegetative materials such as softwood or semi-softwood cuttings are taken during the growing season whereas hardwood cuttings (whips) are harvested during the dormant period (late winter or early spring) and stored frozen until deployed.

Population Size

- With the exception of aspen and balsam poplar, seeds must be harvested from a minimum of 30 individual trees from a maximum radius of two kilometres.
- For aspen and balsam poplar, seeds must be harvested from a minimum of 10 well-spaced clones separated by a minimum distance of 500 metres with a maximum collection area of a five kilometre radius

Lot Identification

- Seed lot identification must include the type of material (seed, cuttings, etc.), owner, species name, collection date, quantity (volume of fruit) and the location of harvest.
- Harvest location should be given in the form of the Alberta legal land description and latitude and longitude should be included.
- Quantities: The amount of raw material harvested should be recorded for tracking purposes.

Handling

- All seeds or vegetative material should be labelled as they are harvested (both inside and on the outside of the seed containers).
- Fleshy fruit requires refrigeration (between 2-10 °C) until cleaned
- Cones or capsules should be kept cool and dry in breathable containers.
- Green cuttings should be stored moist in sealed containers or stems placed in water until transported to a nursery.
- Dormant whips of woody material are bundled and stored frozen until deployed.

Seed Processing and Storage



- All native seeds to be used for operational deployment must be processed at a seed processing facility approved by the Government of Alberta. List the two provincial approved facilities in the BoK or and appendix.
- Seeds and vegetative materials must have verifiable identity documentation, and the integrity of individual lots must have been maintained throughout the process.
- Seed must be tested to assess seed lot quality at facilities approved for seed testing. Again list in the BoK or Appendix
- Seeds are stored at -18 °C to 20° C at a moisture content of between 5-8%.

Seed Registration

- Plant material harvested from Alberta public lands or destined for deployment on public lands must be registered with ATISC Alberta Tree Improvement and Seed Centre.
- Material must be presented for registration with all accompanying information within six months of harvest and all collection, handling, storage and processing information must be made available.

Plant Deployment

- Deploy registered materials only in the seed zone from which they were collected or apply for a variance to deploy in contiguous seed zones.
- Wild transplants and vegetative material taken from within 5 km and 100 m elevation of the target planting site may be deployed without registration.